

## LITTLE WALNUT

*Juglans microcarpa* Berl.

Plant Symbol = JUMI

Contributed by: USDA NRCS Kansas Plant
   
 Materials Center, Manhattan, Kansas



Fruit and foliage of little walnut photographed by W.L. Wagner @ USDA-NRCS Plants Database.

### Alternate Names

Texas walnut, dwarf walnut, river walnut, nogal,  
Texas black walnut

### Uses

The wood of little walnut is sometimes used in the production of furniture, cabinets, paneling, and veneer, but its scarcity limits its use in this regard. The nuts produced by this tree are consumed by wildlife and are considered a valuable food source for many small mammals. Deer are also reported to browse little walnut. Little walnut shows promise as a small tree for shelterbelt and conservation tree plantings especially in dry climates. Little walnut has been used as rootstock in developing non-native walnuts and has potential value in the development of walnut cultivars. Plants were first cultivated in 1868 (Brinkman, 1974).

### Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

### Description

**General:** Walnut family or Juglandaceae. A monoecious tree with large pinnately compound alternate leaves without stipules. There are two members of the Juglandaceae family 1) *Carya* or pecan and hickory and 2) *Juglans* or walnut. *Juglans* is derived from a Latin phrase *Jovis glans* meaning "the acorn of Jove" and *microcarpa* refers to the small size of its fruit (Stephens, H.A. 1969). Little walnut is a small to medium tree with single or multiple trunks and spreading low branches. The mature height depends on the environmental conditions grown under, but heights of 6 to 15 meters have been described. Leaves are alternately attached to the tree and pinnately compound with 17-23 narrowly linear, lanceolate curved leaflets. Leaves overall are 9 to 23 centimeters (cm.) long. The individual leaflets are 3 to 9 cm. long and 1 to 2.5 cm. wide. Flowers bloom in May and have separate male and female flowers. Male flowers or catkins are yellow green and attached to last years twigs. Female flowers are small, yellow green and are located on the ends of branches in small clusters which appear in spring with leaves on new growth. Fruit is displayed in October and may be single or 2 to 3 in a cluster. Fruit shape is globular with a 2.8 to 3.2 cm. diameter and a thin brown hairy husk. The mature bark is brown, deeply fissured with ridges flat topped and occasionally loose. The bark of young trees and branches is often silvery gray and smooth.

**Distribution:** For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site. Little walnut is a native species that can be found in southwestern and central Kansas through western Oklahoma and Texas, New Mexico and Arizona and south into northern Mexico. In Oklahoma little walnut is most abundant in and around the Wichita Mountains, but is scattered throughout the western part of the state (Oklahoma Biological Survey, 1999).

**Habitat:** Little walnut grows in dry, rocky ravine banks and hillsides (Stephens, 1973). It would also commonly be found within the narrow riparian forests adjoining a river or creek bottom.

### Adaptation

This tree is adapted to sites that are more severely limited, moisture wise than other trees. Accessions that are being grown in Tribune, KS have responded well to the low water potential that they have

experienced in that western region of Kansas. Little walnut commonly grows on shallow calcareous or alluvial soils.

### **Establishment**

Propagation by seed is the most reliable way to produce little walnut seedlings. Like most walnut species, the seeds are characterized as having a dormant embryo (Brinkman, 1974). The North American species also have a hard seed coat (Young and Young, 1992). Dormancy can be broken by chilling at 3 to 5 degrees Centigrade (°C) for 90 to 120 days. In the nursery trade walnuts are either sown in the fall shortly after harvest or pre-chilled outdoors over winter in moist sand, covered with 60 cm of soil mulch. Screening is used to prevent rodent damage and normally fungicide is applied to prevent disease during the long pre-chilling process. After pre-chilling is accomplished a germination test can be conducted in moist sand at 20 to 30 °C alternating temperatures. The removal of a small section of shell may speed up the germination at this point. A germination percentage of around 50 percent is normal. Pre-chilled seed can be sown in the spring. Some nurseries simply broadcast the nuts on a tilled surface and then press the nuts into the ground with a roller. Some nursery personnel hand sows the nuts at a rate of 160 per meter squared. Seed should be covered with 2.5 to 5.0 cm. of nursery soil and again protected from rodent damage. Cleaned seed averages 203 seed units in a kilogram (Brinkman, 1974).

### **Management**

Seedlings will need to be protected from browsing animals until established. Seedling growth rate will be fairly rapid once the plants are established and growing well. Little walnut will bear fruit at approximately 15 to 20 years. The interval (2 to 3 years) and amount of fruit produced will be irregular in subsequent years (Young and Young, 1992). The nut meat of little walnut is described as nutritious and of high quality (Simpson, 1988).

### **Pests and Potential Problems**

The walnut husk fly infests ripening fruit of little walnut after summer rains (Lamb, 1971). The amount of damage caused by this insect is variable, but appears to be less in open, windy areas. Little walnut is highly susceptible to root or crown rot when periodically flooded. It is less susceptible to the fungus that causes walnut anthracnose than is black walnut.

### **Environmental Concerns**

There are no known environmental concerns associated with little walnut.

### **Seeds and Plant Production**

Walnut fruits should be collected from the ground in the fall or early winter, either after naturally falling from the trees or being knocked from the trees by flailing or shaking. Mechanical tree shakers are used in the commercial production of walnuts. Nuts are easiest to extract from husks at the early stages when husks are softening. At later stages husks become mushy and can not be removed completely and if allowed to dry completely the husks become very hard and removal is all but impossible. After cleaning, unfilled nuts can be separated from filled nuts by floating them in water. Seed enclosed in a husk will germinate, but for standardization in planting and in topical applications of fungicides husks are generally removed in nursery operations. Seeds of *Juglans* can be stored for long periods of time at low temperatures (3 to 4 °C) and high (80 to 90 %) humidity (Young and Young, 1992). Most species of this genus have a dormant embryo and must be stratified 3 to 4 months or planted in the fall to break the dormancy (Dirr and Heuser, 1987).

### **Cultivars, Improved, and Selected Materials (and area of origin)**

Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under "United States Government." The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture." There are currently no conservation releases of little walnut from the plant materials program. However, they are commercially available at selected nurseries.

### **References**

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For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

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